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Structural Reform and Growth: What Really Matters? Evidence from the Caribbean

By Kevin Greenidge, Meredith Arnold McIntyre, and Hanlei Yun

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I N T E R N A T I O N A L M O N E T A R Y F U N D

IMF Working Paper

West Hemisphere Department

Structural Reform and Growth: What Really Matters?

Evidence from the Caribbean

Prepared by Kevin Greenidge, Meredith Arnold McIntyre, and Hanlei Yun

Authorized for distribution by Trevor Alleyne

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Abstract

Since the 1980's with the introduction of IMF/WB adjustment programs structural reforms have been a core part of the reform agenda in the Caribbean. The paper reviewed the package of structural reforms in trade liberalization, financial liberalization and tax policy, and gauges their impact on growth. The paper used a set of reform indices to gauge both short-run and long-run effects of structural reforms on growth, controlling for other possible growth determinants using panel dynamic OLS estimation. In addition, recognizing the importance of institutions to growth the empirical analysis also analyzed the impact of institutional quality on growth for a sample of small states including the Caribbean. We concluded that the benefits of structural reforms are only seen over the long-term and in reinvigorating growth the reform effort needs to be revived and include greater attention to strengthening institutional quality.

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I. INTRODUCTION

In the 1980's and 1990's, faced with serious macroeconomic challenges including sluggish growth and declining export competitiveness, there was a marked shift in the development policy paradigm in the Caribbean away from the emphasis on the protection of domestic markets and significant state involvement in the economy. The new outward oriented strategy emphasized export competitiveness, the adoption of liberal policies to facilitate the more efficient functioning of markets and reduce the role and interventions of the state in the economy.

The shift to liberal economic policies involved the adoption of a general set of structural reforms and these underpinned the policy advice and conditionality in adjustment programs supported by the international financial institutions, such as the IMF, the World Bank (WB) and the Inter-American Development Bank.

We can summarize the general package of reforms as: (i) Trade reforms – pursuit of trade liberalization involved the removal of import quotas; tariff reductions; and improved export incentives; (ii) Exchange rate policy – to ensure a real exchange rate that would improve international competitiveness and restructure economic incentives to expand the production of exports; (iii) Tax reforms – aimed at neutrality and administrative simplification including a shift from trade taxes to other taxes e.g. VAT; (iv) Financial liberalization – set positive real rates to encourage domestic savings and promote investment including through interest rate policy reform; (v) Product pricing policies – removal of subsidies (including agricultural subsidies; elimination of price controls; and (vi) Privatization – the transfer of public companies to the private sector to improve efficiency and resource allocation.

Despite the importance of structural reforms to promoting growth in the Caribbean there has been no systematic attempt to measure what has been reformed or what still remains to be reformed in the various structural policy areas. In addition, unlike in other developing countries, research has not sought to examine the importance of institutional quality to growth in the region, or more generally in small island states. Caribbean research has been focused on assessing the effectiveness of stabilization policies adopted in IMF programs in the region. Hilaire (2000) examined the Caribbean approach to stabilization through looking at the experiences of Barbados, Guyana, Jamaica and Trinidad and Tobago with IMF stabilization programs in the 1980's and 1990's. Similarly, Fontaine (2005) and Greenidge (2011) analyze the impact of Fund programs in specific countries in the region.

The paper assesses the impact of structural reforms on growth in the Caribbean. It builds a set of indices to measure the extent of structural reforms in the region, and employs these to estimate both short-run and long-run effects of structural reforms on growth, controlling for other possible growth determinants using panel dynamic OLS estimation. Also, in recognizing the importance of institutional quality to growth in developing countries, but given the very limited data specific to the Caribbean, the paper widens the sample to include other small states to gauge the effects of institutional quality¹.

¹ Refer to Appendix Table 1 for country samples.

II. STYLIZED FACTS ON STRUCTURAL REFORMS IN THE CARIBBEAN

A. Trade Reforms

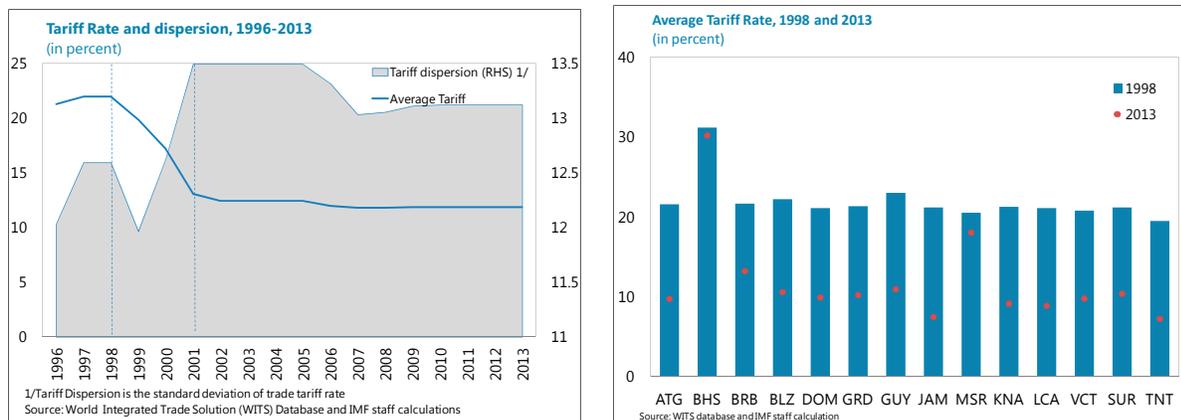
Up to the 1980's trade regimes in the Caribbean were comparable to those of many developing countries. They were characterized by high and widely dispersed tariffs and considerable use of non-tariff barriers (NTBs), including quantitative restrictions such as discretionary licensing requirements. Protectionist policies in the region also included high import duties being imposed on imports from within the region and this severely impeded the growth of intraregional trade.

Trade liberalization took root in the region in the 1980's as part of the structural conditionality of IMF and World Bank adjustment programs. Trade was liberalized with quantitative restrictions being phased out and replaced by temporarily higher import duties that were themselves lowered over time. CEPAL (2007) estimated that non-tariff barriers which affected an estimated 40 percent of imports in the mid-1980's affected only 11 percent by 1997.

Membership in the Caribbean Community (CARICOM) brought a commonality to trade policy as all countries subscribed to the common external tariff (CET) on extra-regional imports. To initiate the process of liberalization in line with global trends, CARICOM countries agreed to a schedule of phased reductions in the CET starting in 1991. In February 1991, the rate structure was brought down from a range of 0-70 percent, to one of 0-45 percent, and in 1993 to 5-20 percent to be implemented over a five-year period. The CET tariff structure was to be 0 percent to 20 percent. Tariff rates imposed under the CET depend on the nature of the taxable commodity. Most commodities are grouped as competing (if regional production satisfies at least 75 percent of regional demand) or noncompeting, and then each group is subdivided into inputs (primary, intermediate, and capital) and final goods. The rate structure is 0 or 5 percent on noncompeting inputs, 10 percent on competing primary and capital inputs, 15 percent on competing intermediate inputs, and 20 percent on all final goods. The CET agreement also allows for a special rate on agricultural products, limited duty exemptions related to economic development, and some additional national discretion in the setting of tariff rates. About half of the countries in the region—which account for the majority of CARICOM trade—have implemented the final reductions of the CET. Despite delays in implementation all the countries in the region with the exception of Antigua and Barbuda, Montserrat and St. Kitts and Nevis have completed the four phases of the CET.

Between the late 1990s and early 2000s, every country except for the Bahamas² had a nearly 10 point reduction in average import tariff rates. Tariffs dropped from average levels of 22% in 1998 to 13% in 2001 but stagnated since then as some countries have not fully adopted the CET. Bahamas maintained relatively high tariffs with an average tariff of 30 percent in the period 1996 to 2013. Also, Montserrat was permitted a “slow track” of CET implementation and as a result the average tariff was 21 percent in 1996 and 18 percent in 2013.

² Bahamas although in CARICOM did not sign up to the CARICOM Single Market and Economy.



B. Financial Liberalization

Following the establishment of the various central banks in the region in the early 1960s and early 1970s, a wide range of policy instruments were employed to maintain monetary stability. These included primary and secondary reserve ratios, interest rate controls and moral suasion. Also in keeping with objectives of currency stability, virtually all of the Caribbean central banks at one point or another have utilized exchange controls as a general policy tool. However, coming into the 1980s, these economies, faced with growing balance of payments problems and rising fiscal deficits, were forced to seek ways to improve their domestic financial systems to achieve more efficient mobilization and allocation of resources.

The process of financial liberalization in the Caribbean is most evident during the early 1990s, mainly as a result of the countries engaging in IMF stabilization and structural adjustment programs, which were designed to restore economic growth. The adoption of such policies was in an effort to liberalize the domestic financial systems and, in some cases, included the lifting of restrictions on capital flows and the floating of exchange rates.

Credit Controls

All the countries reviewed abolished credit controls during the early 1990s, but have placed greater reliance on reserve requirements, which continue to be an active policy tool today. In this regard, while Guyana, Jamaica and Trinidad and Tobago have abandoned secondary reserve requirements and only maintain the cash reserve requirement, Barbados, The Bahamas and the Organization of Eastern Caribbean States (OECS) have retained both instruments.

Interest Rates

One of the first monetary measures adopted by central banks in the region was the control of interest rates on deposits which was subsequently extended to loans. However, the deregulation of interest rates has been a common feature of the liberalization process, as the countries adopted more indirect instruments of monetary policy. Only OECS currently have controls on interest rates in the form of a floor on the deposit rates, which is argued as complementary policy in support of their fixed exchange rate regime. Barbados recently abolished the minimum savings rate on deposit which was in place for over 40 years.

Privatization

There has been a general trend towards the privatization of commercial banks in the region. Currently, there are very few state-owned banks and they are concentrated in the ECCU sub-region. The most recent privatization occurred in Barbados, where the Barbados National Bank was partially privatized in 2003 after 30 years of state control; the state retained a significant interest in the Bank until 2013 when it was totally privatized.

Exchange Controls

The area of exchange controls was perhaps the most emphasized dimension of the financial liberalization programs undertaken by Caribbean countries in the 1990s. This is because such controls were viewed as a hindrance to the inflow of much-needed capital for economic growth. Also, financial liberalization is seen as an essential part of the proposed CSME which makes provisions for the free movement of goods, services, capital, selected categories of skills and the right of CARICOM nationals to set up business in any CARICOM country. Thus, the movement to the CSME has encouraged CARICOM countries to speed up the liberalization process. Guyana, Jamaica and Trinidad and Tobago have removed all restrictions on both the current and capital accounts, albeit at different paces. While Jamaica fully liberalized both accounts simultaneously, Guyana phased the process over a five-year period, starting with current account transactions and then moving to the capital account. Trinidad and Tobago sequenced the liberalization efforts over a three-year period. Fixed-exchange rate countries of Barbados, The Bahamas and the OECS have liberalized current account transactions, while choosing to gradually remove restrictions on capital accounts.

Barriers to Entry

Not much has changed in this dimension since the establishment of the various central banks in the early 1960s and early 1970s. The legislation governing the operations of regional central banks (Central Bank Act) details the necessary criteria for entry to the respective banking systems and this is complemented by a Financial Institutions Act. It is not clear whether or not these criteria are restrictive. Nevertheless, there are very few documented cases of an application for a banking license being refused, although there are several cases of licenses being revoked.

Bank Autonomy (Government Regulation of Operations)

From the inception of the various central banks the focus has been on prudential regulation and supervision as opposed to direct involvement in the day-to-day operations of banks. So, except for the Government of Jamaica's direct intervention in the operations of some banks following the financial crisis of the 1990s as part of the restructuring program, this has not been an area of concern in the region.

In summary, the Caribbean countries have made significant progress in the implementation of financial liberalization program over the last 3 decades. All countries have eliminated controls on credit allocation, deregulated interest rates, embarked on a path of privatization and reduced or abolished exchange controls. However, they have all kept reserve requirements as part of their

monetary policy programs. Another interesting feature of the process is that those countries with fixed exchange rate regimes have, up to December 2005, all maintained significant restrictions on the capital account and have also continued to administer a minimum deposit rate, while those with floating rate regimes have fully liberalized those areas.

C. Tax Reforms

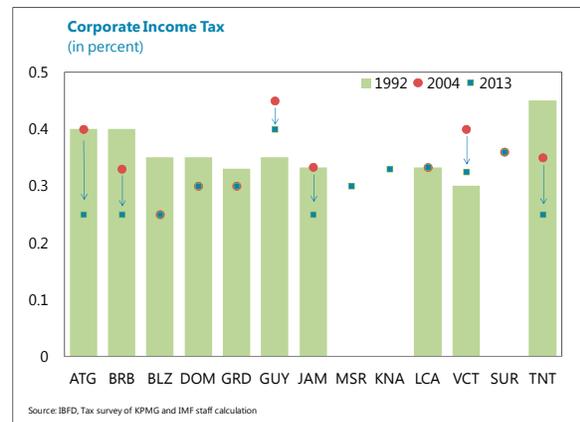
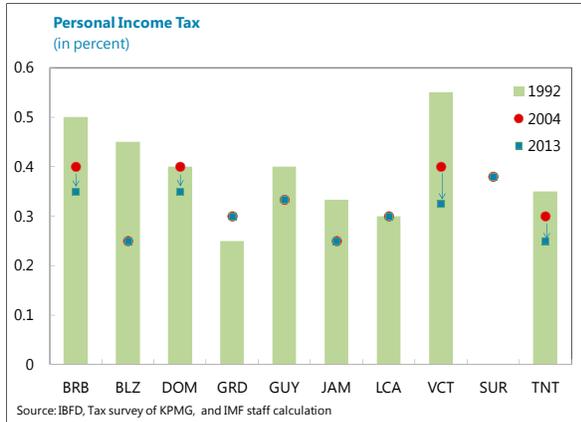
With a greater commitment to liberal economic policies, tax reform took root in Caribbean countries. The common feature of the reforms in the tax area has been the pursuit of neutrality, legal and administrative simplification with greater collection. The reforms had the effect of replacing taxes on foreign trade with domestic taxes, and the extreme marginal rates that some countries applied to personal and company income taxes have been lowered since the value-added tax has gained wider acceptance. Nevertheless, the effectiveness of taxes in most countries in the region remains weak due to the widespread use of tax exemptions resulting in a significant narrowing of the tax bases and problems of evasion and administration. Indeed, all Caribbean countries have fiscal incentive regimes that provide generous tax concessions to encourage investments in the main economic sectors. In addition, in many countries discretionary tax exemptions are also pervasive further reducing the tax base.

The taxation of income that is levied in the Caribbean countries varies considerably. Countries such as Antigua and Barbuda, Bahamas, and St. Kitts and Nevis did not levy any taxes on personal income for most of the last two decades³. Although St. Kitts and Nevis does not have explicit taxes on personal income, the Housing and Social Development Levy was introduced in 1996 on all wages and salaries; the structure and the rate of the levy have since changed.⁴ At the other end of the spectrum are countries that levy taxes on income. Income taxation in the Caribbean countries has undergone two rounds of reforms since 2000. From the early to mid-2000s, reforms focused on the consolidation of direct taxation: the PIT (personal income tax) was introduced in Antigua and Barbuda, and a 3 percent levy on salaries was introduced in Grenada to aid the reconstruction effort after Hurricanes Ivan and Emily, propping up income tax collections until it was repealed in 2009. For Suriname, the available data is from 2004 and the personal income tax rate has not changed since then (rate=0.38). Corporate income tax (CIT) revenue also increased during that period, particularly in St. Kitts and Nevis primarily as a result of a new tax audit program and increased profitability of the indigenous bank. Toward the end of the decade, the second round of reforms focused on reducing income tax rates, along with some widening of the base and a reduction in the number of PIT brackets. Except for St. Lucia, the high marginal rates of personal income tax rate applied in the 1990s on personal income were cut substantially in the 2000s in our sample group, from an average of 42% to 30%.⁵

³ Antigua and Barbuda had no personal income tax up to 2005 when PIT was reintroduced. Recently, in the 2016 budget the government announced the removal of PIT.

⁴ The Housing and Social Development Levy Act was amended multiple times, the latest of which was in early 2011 requiring contributions of 3 percent on wages and salaries by all employers and a progressive marginal rate schedule (from 3.5 percent to 12 percent) applicable to different brackets of wages, payable by employees.

⁵ The change of the sample group comes from IMF staff calculations, tax rate data were from different sources: (i) International Bureau of Fiscal Documentation, IBFD; (ii) Individual Income Tax and Social Security Rate Survey and (iii) Corporate and Indirect Tax Survey of KPMG; in addition to the Global Indirect Tax Rate from Deloitte.



Tax reform in the Caribbean is designed to create a tax system that is efficient, equitable and administrable, moreover, provides adequate and stable revenues. The highest priority is to replace existing domestic consumption taxes with a value-added tax. (VAT) The introduction of the VAT reshaped the revenue structure. It is applied to certain goods that have been highly taxed, including petroleum products, alcoholic beverages, tobacco, passenger cars and services such as telecommunications. The introduction of a VAT also facilitated the reduction of import duties associated with trade liberalization. Economic theory has shown that a value-added tax is superior to a system with non-zero tariffs in that it is possible to increase revenue and consumer welfare by replacing tariffs by consumption taxes. Tariffs lead to distortions of factor use in production as domestic prices are no longer equal to international prices. Therefore, replacing tariffs by consumption-based taxes can lead to more efficient production and in particular a wider tax base as consumption taxes can be levied on all goods consumed whereas tariffs only apply to imports.

To moderate the distorting effects of taxation on production and investment decisions and to compensate from the expected revenue losses from trade liberalization, in the 1990s and 2000s, most Caribbean countries adopted value added tax systems on consumption. The introduction of the VAT reshaped the revenue structure. For ECCU, most of the countries adopted the standard rate of 15 percent with a lower rate of 10 percent applied to tourism industries. There were reversals in Grenada (1995) and Belize (1999) due to weak design and administration or policy reasons. In Grenada, many goods and services were zero-rated; the value-added tax was essentially unable to significantly broaden the tax base.

The implementation of the VAT during 2006-2012 was the cornerstone of the successful tax reform in Caribbean countries, especially for ECCU countries. In addition, there was an increase in the coverage or efficiency of the VAT in most countries. Despite the failure of value-added taxation to gain a permanent foothold in Grenada and Belize in the 1990's, the more recent experience in Barbados, St. Kitts and Nevis and St. Lucia was quite successful, reflected in higher VAT Productivity, also known as c-efficiency ratios (Table 1).^{6,7}

⁶ C-efficiency ratio is a measure of revenue productivity, equals total VAT revenue as percentage of consumption or GDP, divided by the VAT standard rate.

⁷ The table is prepared by Fiscal Department, IMF, from FAD tax policy database and IMF staff calculation.

{ TC "/"\fB }

Table 1. Caribbean Countries: VAT Rates, As of mid 2013 (in percent)					
	Date VAT Introduced	Standard Rate at Introduction	Current Standard Rate	VAT Productivity at Introduction	VAT Productivity in 2013
Antigua and Barbuda	Jan. 2007	15.0	15.0	0.55	0.51
Bahamas	Jan. 2015	7.5	7.5		
Barbados	Jan. 1997	15.0	17.5	0.13	0.72
Belize /1	Jul. 2006	10.0	12.5	1.12	0.82
Grenada	Feb. 2010	15.0	15.0	0.54	0.56
Dominica	Mar. 2006	15.0	15.0	0.70	0.76
Jamaica /2	Oct. 1991	10.0	16.5	0.72	0.55
St. Kitts and Nevis	Nov. 2010	17.0	17.0	0.10	0.75
St. Lucia	Oct. 2012	15.0	15.0	0.37	0.80
St. Vincent and the Trinidad and Tobago	May. 2007 Jan. 1990	15.0 15.0	15.0 15.0	0.13 0.49	0.26 0.43

1/ Only telephone services are subject to GCT at a rate of 20 percent. And motor vehicles are subject to GCT at rates up to 113.95 percent.
2/ 10 percent rate applies on goods; 8 percent rate also applies on services. 25.0 and 50.0 are reserved for luxury goods like yachts.
Sources: International Bureau of Fiscal Documentation, 2013 ; Deloitte, Global Indirect Tax Rates, 2013.

D. Privatization

Following their independence in the 1960s and early 1970s most Caribbean countries embarked on a process of nationalization of what they considered to be the key institutions to support their long-term growth and development, particularly utility companies and banks. These actions were guided by the dominant ideology of that period. As independent countries they aimed to assert their sovereignty and economic independence, including through ownership of the country's main economic sectors. However, coming in to the 1990s, this process began to unwind as one by one these countries, in the face of rising public sector indebtedness and deteriorating fiscal positions, became involved in structural adjustment programs (SAP) supported by the IMF and World Bank. Privatization was therefore seen as a way to improve efficiency in public institutions and strengthen fiscal performance. As part of its 1989 SAP, Guyana privatized 14 public enterprises between 1989 and 1992 including the telecommunications and transportation companies, and its largest bank. In Trinidad and Tobago, the process got under way in 1987 under the newly elected National Alliance for Reconstruction government and by 1995 roughly 30 companies had either been fully or partially privatized. Jamaica's privatization program began in 1981 with support from both the IMF and World Bank and by 1991 close to 200 companies were diversified. This pattern of privatization was consistent throughout the different countries in the region, to varying degrees.

III. LITERATURE REVIEW

A number of empirical analyses have highlighted the importance of structural reforms. Easterly, Loayza and Montiel (ELM, 1997) measured econometrically the impact of macroeconomic policy reforms on growth using a world-wide panel of 70 countries during 1961-1993 including 16 from Latin America. They found that stabilization policy and reforms in Latin America raised the region's average long-term economic growth by 1.9-2.2 points. However, ELM didn't address the issue of the impact of structural reforms. Fernandez-Arias and Montiel (1997) added

an index of structural reforms to the basic ELM model (for 69 countries, 18 in Latin America) and found that macro reforms in recent years added an additional 0.5% to the average growth rate. Lora and Barrera, (1998) estimated a standard long-run growth model using 19 countries' observations, which suggested that structural reforms had a quite powerful effect on growth, measured either directly or indirectly through investment and productivity. A recent IMF (2013) paper⁸ indicated that structural reforms gave greater play to market forces, better policymaking and greater trade and financial openness, which are keys to sustained growth.

However, according to the latest published World Economic Outlook,⁹ product market liberalization-reforms that increase competition in the sale of goods and services have a positive effect on productivity, especially in the service sectors, but the short-term effect is negative. Meanwhile, labor market deregulation does not help productivity at all, and even has negative effects in the short-run.

There is a broad consensus in the literature based on influential theoretical models that indicated trade openness can lessen market restrictions and accelerate the diffusion of technology, which is an important component of a strategy to invigorate economic growth.¹⁰ The literature does not only provide support for the importance of structural reforms in the growth process. Ros (2000), Rodriguez and Rodrik (1999) cast serious doubt on the supposedly robust positive relationship between trade reform and growth. They pointed out it is highly sensitive to the way trade reform is measured and there are data problems.¹¹

There is a lot of empirical analysis that provides strong evidence indicating that a higher initial level of financial development is associated with higher subsequent rates of economic growth and improvements in economic efficiency after controlling for a wide variety of economic factors.¹² MacKinnon (1973) and Shaw (1973) argued that financial repression in developing countries may prevent an efficient allocation of capital, and that financial liberalization, by unifying domestic capital markets, would boost financial development and economic growth.

Most of the studies consider one broad type of reform in isolation, while there exists a smaller literature that jointly assessed effects of different reforms and focused on interactions between subsets of reforms in the areas of international trade, capital account and domestic finance. Hauner and Prati (2008) conducted research on the sequencing of capital account, trade and domestic finance reforms and found that trade is a leading indicator, but they cannot detect a clear sequencing pattern between the latter two and provided a normative assessment. McKinnon (1993) argued that trade liberalization and domestic financial reforms should precede capital

⁸ Era Dabla-Norris, Giang Ko, Kalpana Kochhar, Annette Kyobe, and Robert Tchaidze(2013), "Anchoring Growth: The Importance of Productivity-Enhancing Reforms in Emerging Market and Developing Economies"

⁹ WEO Chapter 3, in the last pages (Box 3.5, p104)

¹⁰ McKinnon (1973), Krueger (1997), Dollar (1992), Sachs and Warner (1995), Edwards (1998) and Henry (2007) are among the several studies supporting this view

¹¹ Rodriguez and Rodrick (1999) pointed out that data sets covering relatively short time spans will reveal a positive relationship between trade restrictions and output growth

¹² Beck et al., 2000a and 2000b, Aghion et al., 2005.

account liberalization, as capital account liberalization may exacerbate existing trade distortions or destabilize highly regulated domestic financial markets. In a panel setting, Braun and Raddatz (2007) found that domestic financial development has a smaller effect on growth in countries that are open to trade and with free capital flows. More recently, a 2015 IMF Board Paper¹³ pointed out that structural reforms on the fiscal side are a top priority, but the benefits of reform tend to become more pronounced when reforms are bundled together.

IV. MEASURING THE IMPACT OF REFORMS: METHODOLOGY AND INDICES

In order to measure the effects of structural reforms on growth, quantified indexes were constructed so that one could compare the extent of reforms between countries or the progress of reform in a single country. Several studies have made valuable contributions to the index. Eduardo Lora developed a set of reform indices to measure the effect of region-wide structural reforms in 19 Latin America countries during the period 1985-1995 through five policy areas: trade policy, financial policy, tax policy, privatization and labor legislation. He updated the index in 2012 to measure the evolution of structural reforms in the period from 1985-2009. Another important effort is the World Bank's 1997 study: *The Long March: A Reform Agenda for Latin America and the Caribbean in the Next Decade*. The study concentrated on five areas of structural reform: international trade openness, financial development, labor market flexibility, proper use of public resources and efficiency of public revenue generation, and good governance. Also, there are other databases and indexes related to structural reform. Some of them cover a variety of policy reforms¹⁴, while others focused on specific areas such as financial regulation and supervision¹⁵ and labor legislation¹⁶.

In the paper, we extended Lora's trade and tax index to Caribbean countries and adopted the methodology utilized by Greenidge and Milner to quantify financial liberalization.¹⁷ Annual data was collected for 13 Caribbean countries from 1970 to 2014. The countries are Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago. The index reflected the evolution of the three reform areas: trade reform, financial liberalization and tax reform. Each sub-index was normalized between zero and one where zero is the least liberalized while one is the opposite. The difference between raw data and the least liberalized country observation is expressed as a percentage of the difference between the maximum and minimum observations for all the countries over the entire period. Instead of using a simple average of the sub-indexes to compute the reform index as was done by Lora, the paper used principle component analysis. The index measured each country's performance relative to the most liberalized country in the

¹³ IMF Board paper, 2015, "Structural Reform and Macroeconomic Performance: Initial Considerations for the Fund", Washington DC, United States: International Monetary Fund.

¹⁴ Morley and Pattinato, 1999, World Bank Doing Business (2004), Ostry, Prati and Spilimbergo, 2009.

¹⁵ Abiad Detragiache and Tressel, 2008; Barth, Caprio and Levine, 2008.

¹⁶ Aleksynska and Schindler, 2011; Rama and Artecona, 2002.

¹⁷ The approaches used in this paper to measure financial liberalization is from the paper 'The nature and measurement of financial liberalization: an application to the Caribbean' by Kevin Greenidge and Chris Milner.

region so that it was only intended to measure the neutrality of the policies rather than the quality. However, indices are not strictly comparable across sectors.

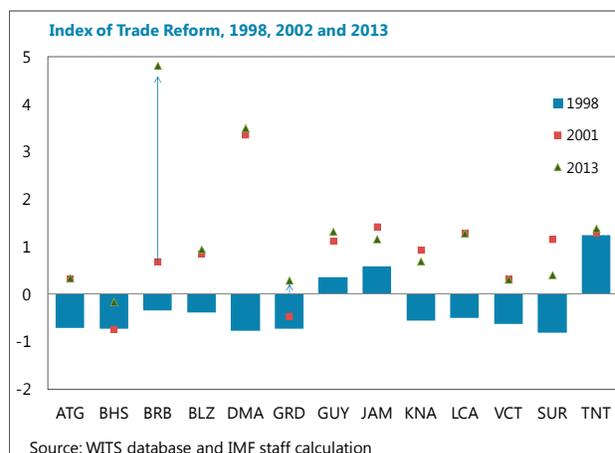
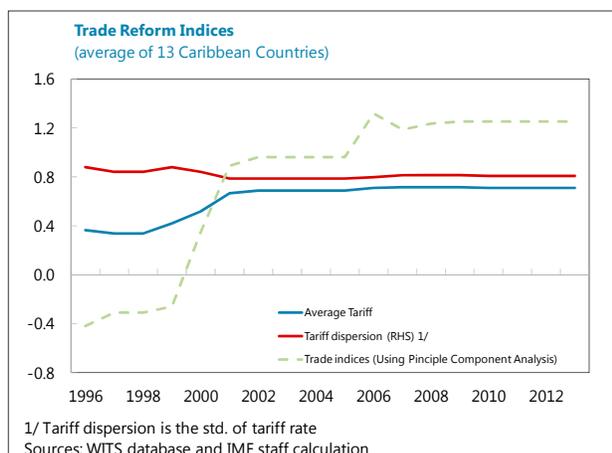
In formal terms the index value for the country i at time t is $I_{it} = (R_{it} - Max) / (Min - Max)$, where I_{it} is the index value for country i at year t , R_{it} is raw value for country i at year t , Max is the maximum value of the measure for all countries over all years, and Min is minimum value of the measure for all countries over all years.¹⁸

A. Trade reform

The trade index includes two subcomponents: the average level of tariff rates and the dispersion of tariffs.¹⁹ Data are taken from the World Integrated Trade Solution (WITS) database of the World Bank for the period 1996 to 2013. Principle component analysis is used to calculate the combined indices; the index is on a scale of 0-1 where 0 is the highest tariff level and largest dispersion while 1 is the opposite. 1 also means most liberalized trade regime.

One problem with the index is lack of data. There is neither adequate historical data for ECCU countries, nor continuous series with common methodologies. Given these considerations, the latest available tariff rates have been imputed to represent the value of previous missing data. In addition to tariffs, there could also have been quantitative restrictions on imports, such as quotas and licensing requirements for which there are no tariff equivalents and cannot be reflected in the trade reform database.

In the trade area, as discussed earlier, the significant increase in the index between 1998 and 2001 reflected the intense reform process during this period. However, except for Barbados, there were no major changes thereafter, the reform was halted since some Caribbean countries did not fully adopt the CET and finish the program.



¹⁸ The approach adopted in this paper to gauge structural reforms is the most commonly used method in literature.

¹⁹ We took the standard deviation of tariff rate from WITS database as the measurement of tariff dispersion.

B. International financial liberalization

Measuring financial liberalization is not an easy task, primarily given its multifaceted nature. We adopted the approach designed by Greenidge and Milner (2006), subdivided the various restrictions on the free flow of international finance into controls on payments and transfers and controls on capital transactions. The categorization was based on the IMF's annual report, *Exchange Arrangements and Exchange Restrictions (AREAER)*, which contained detailed information on each member country's exchange arrangements, administration of controls, prescription of currency, regulations on import payments, payments for invisibles, exports and export proceeds, proceeds from invisibles, capital account transactions, and gold.

The indices were constructed based on the decision rules set out in Table 2. Table 3 demonstrates the process of constructing the indices using 1991 as an example. Capital Receipts and Payments are measured by 'Capital' which is scored on a 0-4 scale. Inward and outward current account transactions are based on a scale of 0-8 (note that current account transactions include both goods and services, each of which is on a scale of 0-4). Finally, there is a category of 'international agreement' which is scored on a 0-2 scale. The resulting 0-14 scale gives a measure of IFL. Higher numbers indicate more financial liberalization.

The IFL index is then calculated on a scale of 0 to 1 where 0 corresponds to the lowest IFL and 1 to the highest. In constructing the indices, the major concern is that the conversion of the qualitative text to a quantitative measure is somewhat subjective, although in a consistent way. Another restriction comes from lack of measurement on the domestic financial liberalization, such as freedom of interest rate, state ownership and regulations, entry barriers and the credit controls due to insufficient data in ECCU.

{ TC "/"\fB }

Table 2. Decision Rules Coding	
Value	Descriptions
<i>Goods and Invisibles Payments and Receipts</i>	
x=0	All receipts and payments are blocked
x=0.5	All receipts and payments are necessarily surrendered
x=1	All receipts and payments require approval from the Central Bank. Receipts and payments heavily taxed
x=1.5	Authorised banks are allowed to provide foreign exchange for transactions within a certain limit Transfers do not require approval but are taxed
x=2	Trnsfers are free
<i>Capital Payments and Receipts</i>	
x=0	Approvals are rare
x=0.5	Surrender of receipts is required
x=1	Approval is required from the Central Bank or Minister of Finance. Approval is not required but transfers are heavily taxed
x=1.5	Approval is required but liberally or routinely given Approval is not required but transfers are taxed
x=2	Approval is not required and transfers are not taxed
<i>International Agreemetns</i>	
x=0.5	Mmeber of CARICOM Country is a member of a currency zone
x=1	IMF Article VIII Status

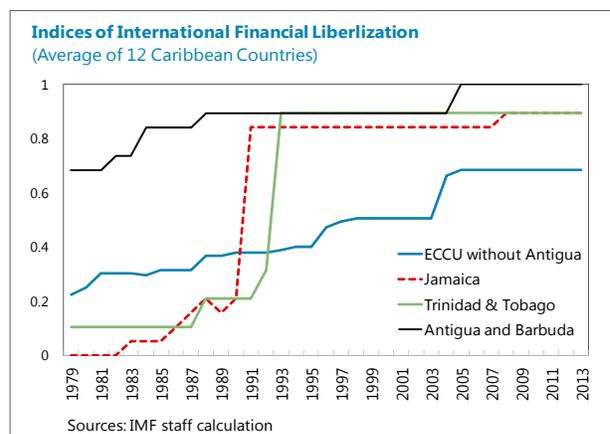
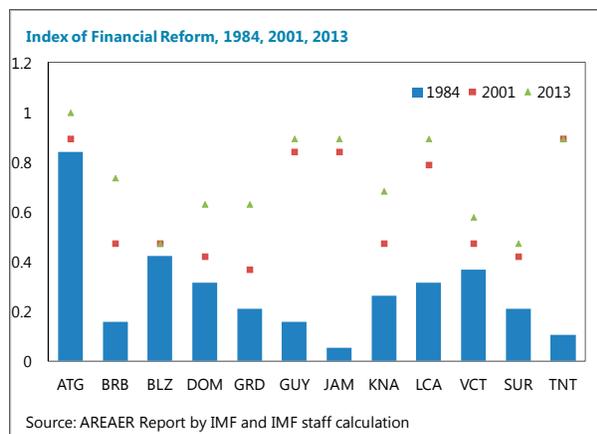
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Table 3. An example for the Construction of the Indices using 1991 IMF data									
	Capital Payment	Capital Receipts	Payment for imports	Payment for invisibles	Receipts for exports	Receipts for invisibles	Agreement	Score	
								C	IFL
Antigua and Barbuda	2.0	2.0	1.5	1.5	2.0	2.0	2.0	4.0	13.0
Barbados	1.0	1.0	1.5	1.5	0.5	0.5	0.5	2.0	6.5
Belize	1.5	1.5	1.5	2.0	0.5	0.5	1.5	3.0	9.0
Dominica	1.0	1.0	1.5	1.5	0.5	0.5	2.0	2.0	8.0
Grenada	1.0	1.0	1.5	1.5	0.5	0.5	1.0	2.0	7.0
Guyana	1.0	1.0	1.5	2.0	1.0	0.5	1.5	2.0	8.5
Jamaica	2.0	2.0	1.5	2.0	2.0	2.0	1.5	4.0	13.0
St.Kitts and Nevis	1.0	1.5	1.5	1.5	0.5	0.5	2.0	2.5	8.5
St. Lucia	1.0	1.0	1.5	1.5	0.5	0.5	2.0	2.0	8.0
St. Vincent and the Grenadines	1.0	1.5	1.5	2.0	0.5	0.5	2.0	2.5	8.5
Suriname	1.0	1.0	1.5	1.5	0.5	0.5	1.0	2.0	7.0
Trinidad and Tobago	1.0	1.0	1.0	1.5	1.0	0.5	1.5	2.0	6.5

The IFL indices cover 12 CARICOM countries for the period 1979-2013.²⁰ Clearly, central banks made certain efforts to liberalize financial controls during this period. Nevertheless, even within the ECCU, there are noticeable differences in the indices. The index for Antigua and Barbuda shows that this economy is far more liberalized than any other ECCU country. It was almost fully financially liberalized from the early 1980s (index=0.8) while the other member countries were not. One view expressed by market participants is that precarious fiscal policies pursued by the government caused the opening up to foreign capital to close the saving-investment gap.

Trinidad and Tobago had active government interventions in the financial sector since 1980s, the movement of the index from 5.5 to 6.5 in the late 1980s and then to 7.5 in 1992 reflects the government's decision to move to a dual exchange rate in the 1980s and remove exchange controls on trade in services and capital flows in the early 1990s. In 1993, Trinidad and Tobago introduced a floating exchange rate and removed all restrictions on the capital account; this is captured in the IFL index, which spiked from 7.5 to 13.

In the 1980s, Jamaica had one of the most complicated financial systems in the Caribbean region, consisting of a number of restrictions and regulations. The IFL index for Jamaica was 5.5 in the early 1980s highlighting the fact that restrictions on current account payments and capital flow controls were used extensively. Jamaica began its financial sector reform in 1985 and undertook an extensive process to achieve macroeconomic stability in 1991. Currently, the index of Jamaica is 13 emphasizing the fact that Jamaica is one of the most financially liberalized economies in CARICOM.



C. Tax Reform

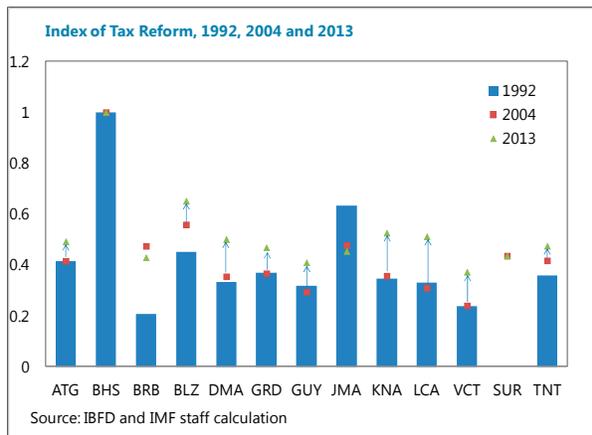
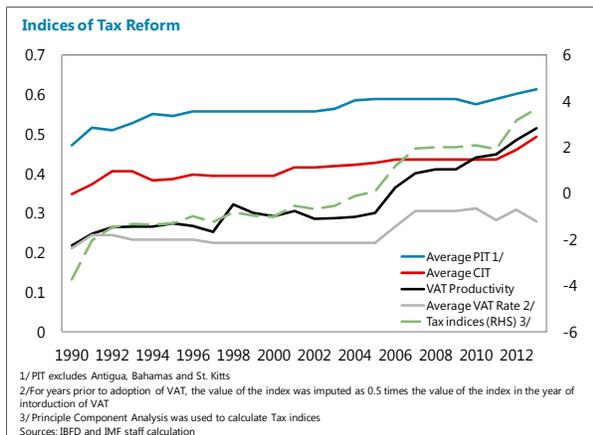
For tax liberalization, four indices have been constructed, by year and country, computed on a scale of 0 to 1:

- The maximum marginal tax rate on personal income where 0 is the highest rate
- The maximum marginal tax rate on corporate income where 0 is the highest rate

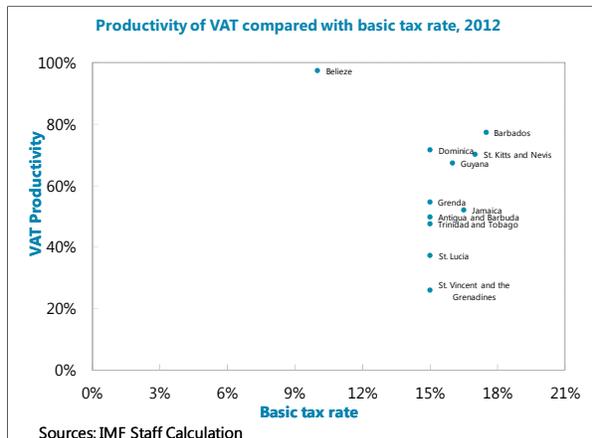
²⁰ Montserrat and Anguilla not included.

- c. Basic VAT rate on a scale of 0 to 1, where 0 is the highest tax rate, for years prior to adoption of VAT, the value was imputed as 0.5 times the value of the index in the year of introduction of VAT
- d. VAT productivity (calculated as the ratio between the tax revenue and private consumption times the basic VAT rate) on the same scale, where 0 represents the lowest productivity. The latest available data were imputed for the initial years.²¹ For some countries there is no VAT but consumption taxes, for example, in Antigua and Barbuda, there is the Antigua and Barbuda Sales Tax (ABST); in Jamaica there is General Consumption Tax (GCT); and for Belize, there is General Sales Tax (GST).

Tax data was collected from various sources such as (i) *International Bureau of Fiscal Documentation*, IBFD; (ii) *Individual Income Tax and Social Security Rate Survey* and (iii) *Corporate and Indirect Tax Survey* of KPMG in addition to IMF data provided by country authorities. Some of the data was reported on a fiscal year basis and in these cases, for comparative purposes, it was converted to calendar year.



The justification for using the top marginal rates of income tax instead of the average is that the former influences labor and investment decisions. We consider the productivity rates of taxes to be the indicators of the degree of effective neutrality of the taxes, which in turn is the result of the neutrality established in the tax regulations and of the efficiency of collection, which depends on evasion and the collection efforts of the tax administration. Therefore, the higher ratings of tax policy correspond to countries with the lowest, flattest tax rates with most



²¹ The tax revenue data comes from IMF staff estimates, and consumption data comes from the World Economic Outlook database, IMF.

effective collection. Tax reforms were quite intense in the 2000s with the reduction of both personal and corporate income tax and introduction of VAT. Two rounds of strong reforms can be observed from the tax indices especially due to the increase in VAT productivity. Except for Bahamas, Jamaica and Suriname, tax reform went smoothly in the region. Although tax rates have been homogenized, the effective collection of VAT (measured as c-efficient) differs due to the exclusion of many final goods and services, especially in countries that apply higher rates. Also, it reflects the performance of a government's revenue administration. For Belize, a wide range of domestically produced agricultural products are zero-rated together with some medicines and medical supplies and financial services.

V. MODEL SPECIFICATION, METHODOLOGY AND RESULTS

Based on the above discussion, most empirical studies on structural reforms and growth begin with the standard growth regression, often referred to as the Barro regression following the pioneering work of Barro and Sala-i-Martin (1995), and add to this baseline model a measure of structural reforms and perhaps a number of interaction terms depending on what is being investigated (see Equation below). The idea is to estimate the effects of structural reforms on growth, controlling for other possible growth determinants. Note that this workhorse regression model of the growth literature, the Barro regression, was first proposed in the seminal work of Mankiw, Romer and Weil (1992), MRW, but with additional explanatory variables.

$$Y_{i,t} = \beta_i X_{i,t} + \varepsilon_{i,t} + \gamma_i Z_{i,t} + \varphi_i SR_{i,t} + \emptyset(SR_{i,t} * ?_{i,t})$$

Here, Y is growth in real GDP per capita and, as noted by Durlauf et al. (2004), X can be seen as representing those growth determinants suggested by the Solow growth model, while Z captures those determinants that lie outside the original Solow theory. In addition, whereas the X variables are quite common in empirical studies, the Z variables vary considerably across studies and also by country (Kenny and Williams, 2001). Moreover, there is an extensive list of such Z variables. The Durlauf et al. (2004) survey identifies 145 different regressors, the vast majority of which have been found to be statistically significant in at least one study using conventional standards. They note that one of the main reasons why so many alternative growth variables have been identified is due to questions of measurement, and attribute the high percentage of statistically significant growth variables to publication bias and data mining.

Remaining with the empirical literature and accepting the Equation as an appropriate framework for examining the growth effects of structural reforms, the question is how to choose among the vast number of possible growth determinants. This is far from an easy task as Durlauf et al. (2004) point this out when they argue that the absence of consensus is one of the fundamental problems of the empirical growth literature.

The choice of variables is arrived at by a survey of the literature as it relates to developing countries, in particular work done on the Caribbean region²². The following variables are

²² Specifically, works by Williams and Daniel (1991), the World Bank{ XE "World Bank" } (1994), Boamah (1997), Lewis and Craigwell (1998), Peters (2001), and Downes (2003). Note that a wider review of the literature on these variables is contained in Greenidge and Milner (2007).

revealed from the survey: fiscal policy, openness to international trade, financial development, inflation, and capital accumulation.²³

Since we are not only interested in the long-run effect of structural reforms on growth but also on the dynamics of the various channels, we opted for a panel co-integration approach, specifically dynamic OLS estimation (DOLS). The choice for panel DOLS versus other alternative estimations procedures such as bias-corrected OLS (BCOLS) or fully modified OLS (FMOLS) is that DOLS is the superior estimator in small samples as discussed in McCoskey and Kao (1998) and Kao and Chiang (2000). The long-run estimates from the DOLS are then embodied in a short-run error-correction model.

The results (Appendix Table 2) suggest that in the long-run, foreign direct investment, gross domestic investment, trade openness and the real effective exchange rate exert a positive impact on the level of real GDP, while government consumption expenditure and financial development have a negative effect.

The finding that investment, both domestic and foreign, is significant in raising output in the long-run is consistent with the central role given to investment in physical capital in the growth literature. Moreover, a 1 percent rise in domestic (foreign) investment accumulation leads to approximately 0.5 (0.1) percentage point increase in output over time.

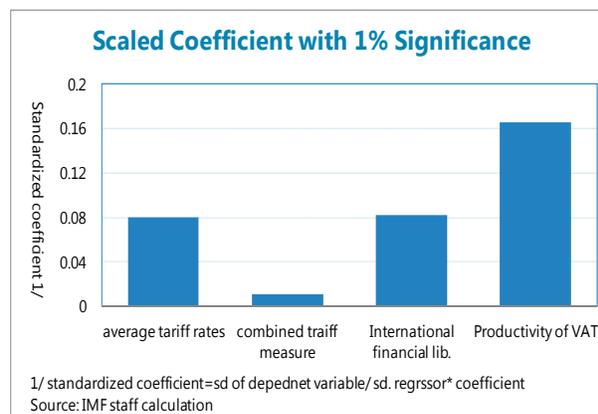
The positive coefficient on openness suggests that greater openness to international trade has allowed these economies to raise output levels over the years. The caveat is that this is an outcome indicator and as such may be capturing other policy actions that encourage trade but that are unrelated to openness. For instance, in many Caribbean countries, exports of services are mainly tourism and have little to do with actual openness to trade in the traditional sense. It is possible to have trade controls in place but invest heavily in tourism product development and marketing. It is more likely that the proxy is capturing such effects.

The negative impact of government consumption expenditure on the long-run level of output is not surprising and one explanation is that government spending in the region has occurred at the expense of private investment and to the extent that this spending is not productive, fiscal policy will have a negative impact on growth. However, it does not necessarily imply that all categories of government spending reduce output but that in the aggregate it does.

The results suggest that capital accumulation is found to be the main driver of growth in the short-run, while government consumption and the real effective exchange rate have no impact.

²³ In the regression, capital accumulation includes domestic investment (both in real and nominal terms) and foreign direct investment; trade openness is the sum of export and import in percent of GDP; for fiscal policy, additional indicators include government public consumption (both in real and nominal terms), primary fiscal balance, public investment (both in real and nominal terms); for financial development, indicators such as claims on the private sector, broad money and private credit. All regressions use annual data from 1960 to 2014, the data comes from IMF World Economic Outlook database, World Development Indicators and IMF staff calculation.

It appears that the benefits of structural reforms are only seen over the long term. Specifically, these reforms have been effective in raising output levels over time. We find that lowering average tariff rates, removing restrictions on the flow of international finance, and increasing the productivity of the VAT have boosted the long-run level of real GDP. However, our results do not provide evidence that structural reforms have any impact in the short-run.²⁴



VI. OTHER CONSIDERATION: INSTITUTIONAL QUALITY

Besides reforms in trade and the financial sector, a voluminous literature established the correlation between institutions and economic performance (Lewis, 1956; North, 1990). Developed countries have laws that provide incentives to engage in productive economic activity. Investors rely on secure property rights, facilitating investment in human and physical capital; government power is balanced and restricted by an independent judiciary; contracts are enforced effectively, supporting private economic transactions.

The institutional framework defines the incentives and wealth-maximization opportunities of individuals and organizations. Typically, institutions in lower income countries are far weaker than they are in high income countries and often weaken the impact of reform initiatives, a point emphasized by Kuczynski and Williamson (2003). They claimed that this significantly impeded the positive impact of liberal economic policy reforms in Latin America. Mauro (1995) demonstrated that there is a negative correlation between corruption and economic growth, Knack and Keefer (1995) found that different institutional measures, such as quality of the bureaucracy, property rights, and the political stability of a country have a positive statistically significant relationship with economic performance. Similarly, Cukierman, Webb and Neyapti (1992) argued that a lack of correlation between the central bank's constitutional autonomy and low inflation in developing countries is likely due to weakness of the judiciary in enforcing autonomy.

In addition, the literature highlights the simultaneous relationship between growth, investment and institutions. Not only will higher institutional efficiency result in higher rates of economic growth, but higher rates of growth will enable the country to improve the quality of its existing institutions. Rosenberg and Birdzell (1986) explained that systems that protect property rights, such as the judiciary, required development commerce at first, before instituting actual mechanisms and regulations. Eggertson (1990), Mauro (1995) and Clague et al (1996) all suggested that a good economic performance increases institutional efficiency.

²⁴ The short-run estimates are in the Appendix Table 3.

An IADB (2009) study on the quality of institutions supporting business development (and competitiveness) found that the Caribbean did not rank highly in comparative institutional quality²⁵ The study found that the region did best when comparing the effectiveness of the legal system with comparators. In particular, Barbados was ranked highly in the ratings and is approximately equivalent to the high income OECD average; although the court system is notoriously slow, albeit fair, in rendering verdicts.

To measure the government's efforts to improve the quality of institutions, the paper utilizes the World Bank 'Worldwide Governance Indicators' for the 13 sample countries in the period 1996-2013. The Worldwide Governance Indicators aggregate indicators of six broad dimensions of governance: Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. The indicator ranges from -2.5 to 2.5 where -2.5 is the weakest governance performance while 2.5 is the strongest.

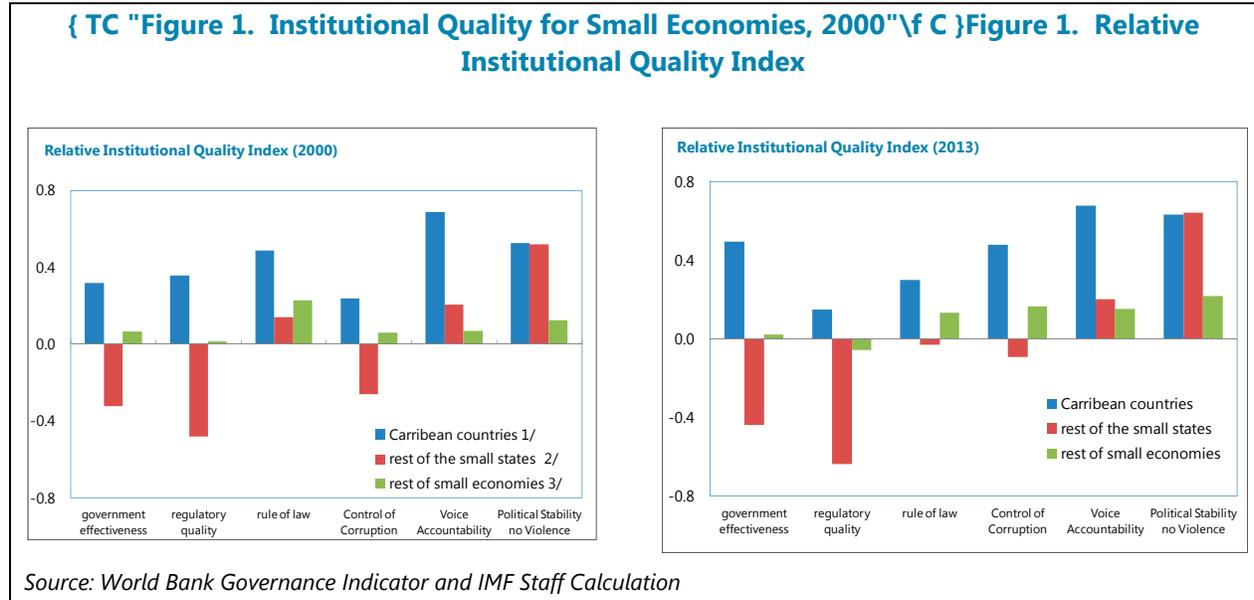
The six Institutional quality sub-indexes are:

- a. *Political Stability and Absence of Violence/Terrorism*, which reflects perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.
- b. *Government Effectiveness*, which reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.
- c. *Regulatory Quality*, which reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that facilitate and promote private sector development.
- d. *Rule of Law*, which reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.
- e. *Control of Corruption*, which reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.
- f. *Voice and Accountability*, which reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

In 2000, the Caribbean outperformed both of the sample groups, especially in voice accountability, government effectiveness and regulatory quality. Political stability was relatively the same in all small states. In 2013, the Caribbean still outperformed the sample groups. There was improvement in government effectiveness and corruption control, but regulatory quality

²⁵ The study plotted public institutions score from the World Economic Forum's *Global Competitiveness Report* (WEF, 2006) against the overall Global Competitiveness Index. The relationship between institutions and competitiveness is strong and positive but the Caribbean countries in the sample (Barbados, Guyana, Jamaica, Suriname and Trinidad & Tobago) did not perform well.

deteriorated as well as rule of law. A similar outcome was also found for the other small states. (Figure 1)

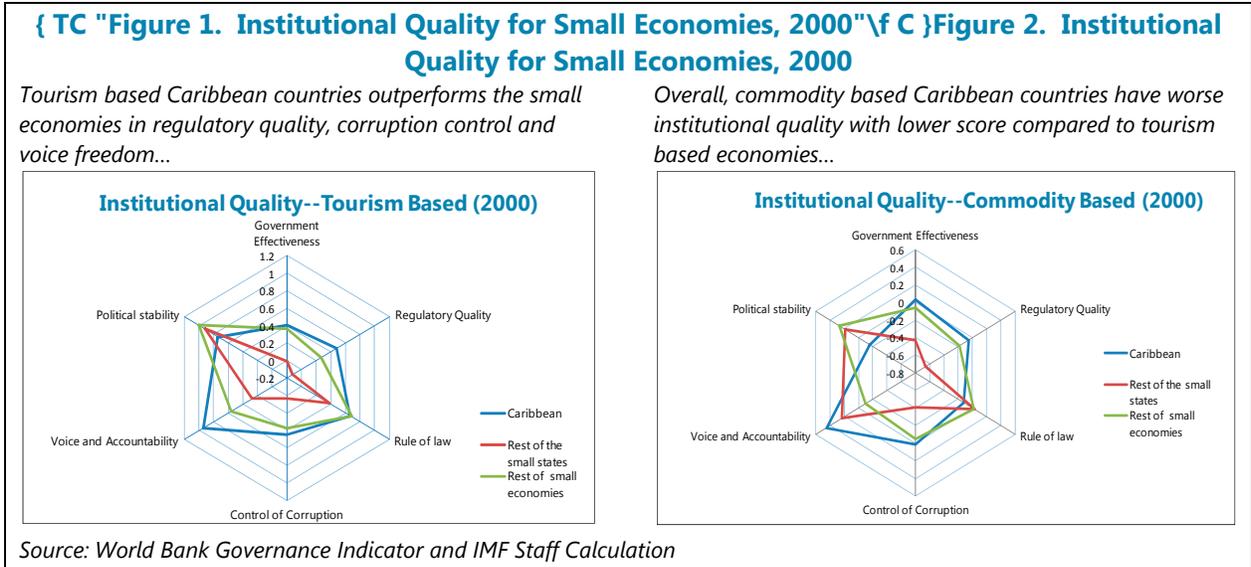


In 2000, relative to small economies, tourism based Caribbean countries²⁶ did better in regulatory quality, corruption control and voice and accountability as measured by the Worldwide Governance Indicators. However, in Figure 2 Caribbean commodity based countries (Guyana, Suriname and Trinidad and Tobago), had a much lower institutional quality score and did not perform as well on the rule of law in society and political stability as the rest of small economies.²⁷

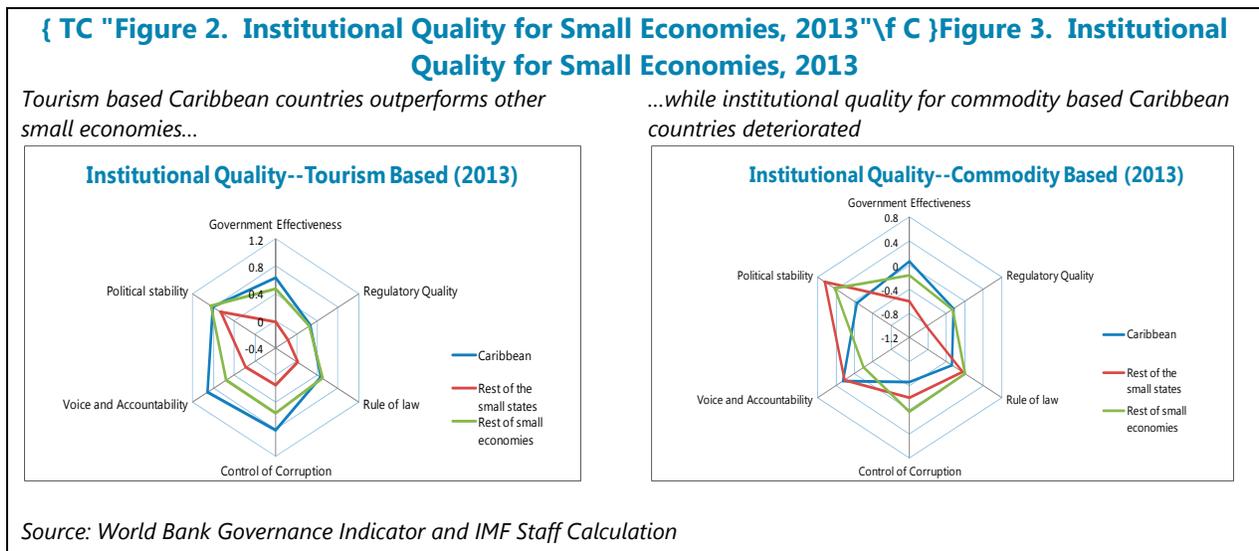
Significant improvement had been made by tourism based Caribbean economies in political stability, control of corruption and government effectiveness, which enhanced the business environment in these countries compared to the rest of small economies. (Figure 3) Although the absolute value of the index is relatively low (0.91 compared to 2.5, the maximum), the governments of tourism based Caribbean countries, especially St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines did a better job of supporting business development.

²⁶ Tourism based Caribbean countries are Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines; Commodity based Caribbean countries are Guyana, Suriname, Trinidad and Tobago.

²⁷ Tourism based small states include Maldives, Mauritius, Cabo Verde, Fiji, Seychelles and Vanuatu, Commodity based small states include Palau, Tonga, Tuvalu, Bhutan, Solomon Islands, Timor-Leste, Kiribati, Marshall Islands, Micronesia, Samoa, Montenegro, Comoros, Swaziland, Djibouti and Sao tome and Principe.



In contrast, commodity based economies performed worse in 2013 compared to 2000, especially in voice and accountability, anti-corruption and political stability (Appendix 2). Overall, the commodity based economies displayed weaker institutional quality than the tourism based economies.

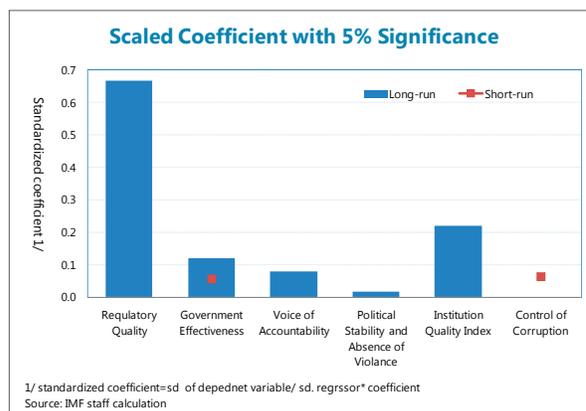


As emphasized in the literature review researchers have shown that long-term sustainable growth also depends on the quality of a country’s institutions. Ideally, we would have liked to have included a measure of institutional quality in the earlier econometric analysis to ascertain the

impact of institutional quality on growth. However, the indicators of institutional quality are only available from 1996 which would question the reliability of any estimates derived. Nonetheless, to quantify the effects of institutional quality, we widened the sample to include 24 other small states, and utilized the same model, to estimate the effects of institutional quality on economic growth.

The results indicate that government regulatory quality, political stability and voice and accountability are significant in raising output over the long-run while anti-corruption can have a short-run effect to boost the economy.

Additionally, improvements to government effectiveness can contribute to higher economic growth in both short-run and long-run. Political stability, on the other hand, has no direct effect on growth. In summary, from a long-term perspective, institutional quality is essential to achieve stronger growth in small states including the Caribbean, therefore strengthening governance institutions could be part of a comprehensive growth strategy.



VII. CONCLUSION

Overall, the region has made some progress in structural reforms, particularly in 1990's, but reform momentum has stalled. There is still much more that needs to be done to support growth. The paper concludes that the benefits of structural reforms are only seen over the long-term and we found no significant evidence of short term gains. There have been gains from lowering average tariff rates, removing restrictions on the flow of international finance, and increasing the productivity of the VAT. However, special attention should be paid to reducing the wide ranging tax concessions. Caribbean authorities are encouraged to make sustained efforts to improve the productivity of the VAT and further liberalize the trade regime via full implementation of the CET by all countries (reduce tariff exceptions) and remove remaining QRs. The remaining restrictions on the flow of international finance, including on FDI, should be removed over the medium to long-run.

Institutional quality is important for promoting growth, especially for small states. Structural reforms can be undertaken to make government more effective, such as improving the quality of the civil service and the speed and transparency of policy formulation and implementation. Country authorities can focus on rationalizing economic regulations and improving administrative efficiency to reduce the transactions costs of doing business. In addition, they can make efforts to incorporate regulations that facilitate and promote private sector development, and reduce the perception of corruption.

Finally, future research could attempt to gauge the contribution of structural reforms to total factor productivity and potential growth by employing growth accounting decomposition before and after reform episodes. Moreover, domestic financial and capital market reforms, privatization and labor market reforms are all worth including if data is available.

{ TC "APPENDIX" \f E } Appendix 1:

{ TC "/" \f F } { TC "/" \f E }

Appendix Table 1. List of Countries in the Sample					
Caribbean Countries	Rest of Small States	Rest of Small Economies		Small States used in the regressions	
Antigua and Barbuda	Bhutan	Bahrain	Mauritius	Antigua and Barbuda	Mauritius
Bahamas, the	Cape Verde	Bhutan	Mongolia	Bahamas, the	Cape Verde
Barbados	Comoros	Botswana	Montenegro	Barbados	Seychelles
Belize	Djibouti	Brunei Darussalam	Namibia	Belize	Comoros
Dominica	Fiji	Cape Verde	Qatar	Dominica	Swaziland
Grenada	Kiribati	Comoros	Samoa	Grenada	Djibouti
Guyana	Maldives	Cyprus	São Tomé and Príncipe	Guyana	São Tomé and Príncipe
Jamaica	Marshall Islands	Djibouti	Seychelles	Jamaica	
St.Kitts and Nevis	Mauritius	Equatorial Guinea	Slovenia	St.Kitts and Nevis	
St. Lucia	Micronesia	Estonia	Solomon Island	St. Lucia	
St. Vincent and the Grenadines	Montenegro	Fiji	Swaziland	St. Vincent and the Grenadines	
Suriname	Palau	FYR Macedon	The Gambia	Suriname	
Trinidad and Tobago	Samoa	Gabon	Timor-Leste	Trinidad and Tobago	
	São Tomé and Príncipe	Guinea-Bissau	Tonga	Maldives	
	Seychelles	Iceland	Tuvalu	Tonga	
	Solomon Island	Kiribati	Vanuatu	Fiji	
	Swaziland	Latvia		Solomon Island	
	Timor-Leste	Lesotho		Vanuatu	
	Tonga	Luxembourg		Kiribati	
	Tuvalu	Maldives		Marshall Islands	
	Vanuatu	Malta		Samoa	

Note: We define a small economy as one with a population of less than 3 million people

{ TC "/" \f F }

Appendix Table 2. Long run Estimates for Structural Reform and Growth									
	1979-2014	1979-2014	1979-2014	1979-2014	1979-2014	1980-2013	1979-2014	1979-2014	1982-2014
sample countries	12	12	12	12	12	11	11	11	11
no. of observations	395	395	395	395	395	352	360	360	333
Foreign investment	0.103 ***	0.103 ***	0.103 ***	0.101 ***	0.089 ***	0.146 ***	1.015 ***	0.802 **	0.089 **
Domestic investment	0.534 ***	0.566 ***	0.517 ***	0.647 ***	0.307 ***	0.547 ***	0.532 ***	0.529 **	0.338 *
Government consumption	-0.345 ***	-0.324 ***	-0.341 ***	-0.347 ***	-0.251 ***	-0.174 ***	-0.313 **	-0.247 **	-0.228 *
Broad money	-1.039 ***	-1.127 ***	-1.028 ***	-1.151 ***	-0.906 ***	-1.067 ***	-1.062 ***	-1.079 ***	-0.986 ***
OPEN	0.118 **	0.118 **	0.118 **	0.117 **	0.100 **	0.104 **	0.118 ***	0.103 **	0.100 *
REER	-0.0555 ***	-0.049 ***	-0.056 ***	-0.051 ***	-0.057 ***	-0.057 ***	-0.056 ***	-0.052 ***	-0.051 ***
Constant	10.21 ***	10.05 ***	10.27 ***	9.49 ***	8.83 ***	9.61 ***	10.232 ***	8.852 ***	8.64 ***
average tariff rates		0.635 ***							0.598 ***
tariff dispersion			0.103						
combined traiff measure				0.2236 ***					
International financial lib.					0.835 ***				0.844 ***
Personal Income Taxes						0.117			
VAT							0.044		
Productivity of VAT								1.983 ***	

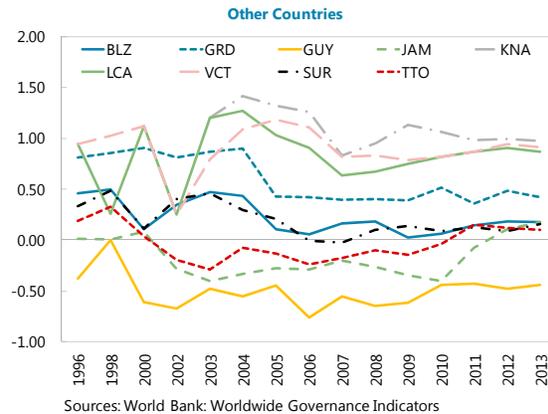
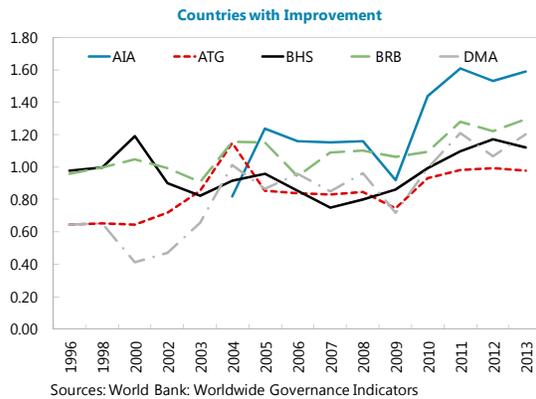
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Appendix Table 3. Long run Estimates for Institutional Quality and Growth								
sample	1996-2013	1996-2013	1996-2013	1996-2013	1996-2013	1996-2013	1996-2013	1996-2013
countries	24	24	24	24	24	24	24	24
no. of observations	406	396	406	406	395	384	401	406
Foreign Investment	0.103 ***	0.103 ***	0.103 ***	0.101 ***	0.089 ***	0.146 ***	1.015 ***	
Dif. Foreign Investment	0.659 ***	0.603 ***	0.557 ***	0.608 **	0.777 ***	0.795 **	0.608 **	0.781 **
Domestic Investment	0.042 ***	0.015 ***	0.038 ***	0.028 **	0.043 ***	0.015 **	0.042 ***	0.042 *
Government Consumption	0.061 *	-0.047	0.061 ***	0.048 **	0.041 **	-0.012 **	0.047 **	0.002
Broad Money	0.633 ***	0.449 ***	0.612 ***	0.644 ***	0.652 ***	0.609 ***	0.629 ***	0.592 ***
REER	-0.222 ***	-0.117 ***	-0.207 ***	-0.158 **	-0.207 ***	-0.217 ***	-0.245 ***	-0.230 ***
Open	0.171 **	0.262 ***	0.211 ***	0.195 ***	0.186 **	0.175 ***	0.181 ***	0.203 ***
Constant	0.32	1.74 ***	0.35	0.12	0.28	0.95 ***	0.530	1.02 ***
Regulatory Quality		0.861 ***						
Government Effectiveness			0.104 **					
Voice of Accountability				0.045 **				
Political Stability & Absence of Violence					0.012			
Rule of Law						0.076 ***		
Control of Corruption							0.018	
Institution Quality Index								0.211 ***
Short run Estimates for Institutional Quality and Growth								
Constant	0.077 ***	0.032 ***	0.041 ***	0.039 ***	0.046 ***	0.186 ***	0.034 ***	
Lagged Growth	0.254 ***	0.260 ***	0.245 ***	0.245 ***	0.257 ***	0.243 ***	0.257 ***	
Dlog(domestic investment) _t	0.026 ***	0.016 ***	0.017 ***	0.017 ***	0.016 ***	0.011 ***	0.017 ***	
Dlog(domestic investment) _{t-1}	0.013 ***	0.014 ***	0.015 ***	0.014 ***	0.015 ***	0.012 ***	0.014 ***	
Dlog(domestic investment) _{t-2}	0.012 **	0.011 ***	0.010 ***	0.011 ***	0.011 ***	0.012 ***	0.009 ***	
Dlog(foreign investment) _t	0.017 **	0.101 ***	0.127 ***	0.097 ***	0.108 ***	0.361 ***	0.143 ***	
Dlog(foreign investment) _{t-1}	0.143 **	0.172 ***	0.154 ***	0.180 ***	0.168 ***	0.092 ***	0.152 ***	
Dlog(government consumption)	-0.053 ***	-0.050	-0.049	-0.053	-0.050	-0.067	-0.045	
Dlog(government consumption) _{t-1}	-0.038 ***	-0.022	-0.019	-0.023	-0.026	-0.048	-0.021	
REER	-0.011 **	-0.001 ***	-0.003 ***	-0.003 ***	-0.005 ***	-0.034 ***	-0.002 ***	
Open	0.031 **	0.061 ***	0.065 ***	0.065 ***	0.065 ***	0.080 ***	0.063 ***	
Open(t-1)	0.030 ***	0.017 ***	0.015 ***	0.018 ***	0.014 ***	0.007 ***	0.014 ***	
equilibrium correcting term	-0.031 ***	-0.037 **	-0.038 **	-0.028 **	-0.038 **	-0.033 **	-0.033 **	
Regulatory Quality		-0.024						
Regulatory Quality(t-1)		0.036						
Government Effectiveness			0.013 **					
Government Effectiveness(t-1)			0.009					
Voice of Accountability				0.014				
Voice of Accountability(t-1)				0.013				
Political Stability & Absence of Violence					0.004			
Political Stability & Absence of Violence(t-1)					0.006			
Rule of Law						-0.012		
Rule of Law(t-1)						0.012		
Control of Corruption							0.014 **	
Control of Corruption(t-1)							0.008	
R-squared	0.356	0.383	0.39	0.38	0.38	0.37	0.39	
Adjusted R-squared	0.317	0.313	0.32	0.31	0.31	0.30	0.32	
S.E. of regression	0.036	0.033	0.03	0.03	0.03	0.03	0.03	
Sum squared resid	0.723	0.345	0.34	0.35	0.34	0.34	0.34	
Durbin-Watson	2.069	2.083	2.04	2.06	2.09	2.07	2.09	

{ TC "APPENDIX"\f E }Appendix 2:

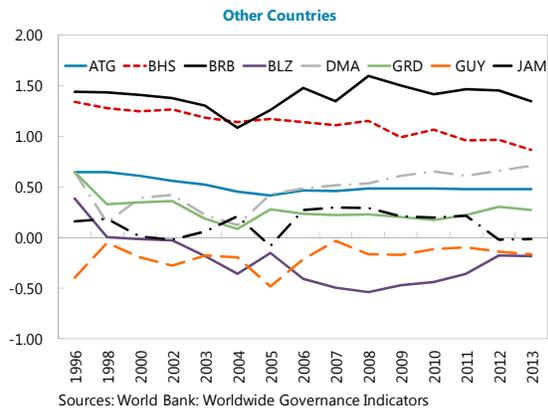
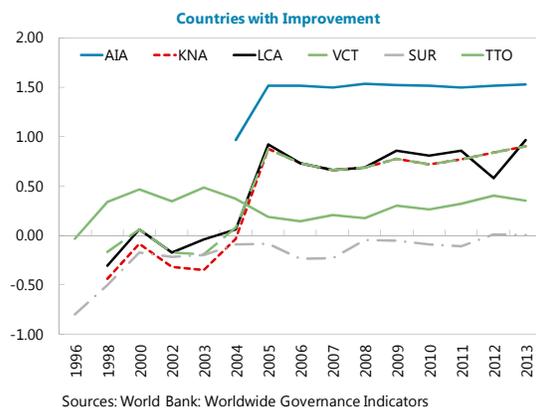
The Institutional Quality in the Caribbean

The institutional quality for doing business in most countries in the Caribbean is weak with a relative low score compared to the highest 2.5 margin. Anguilla stands out in the region.

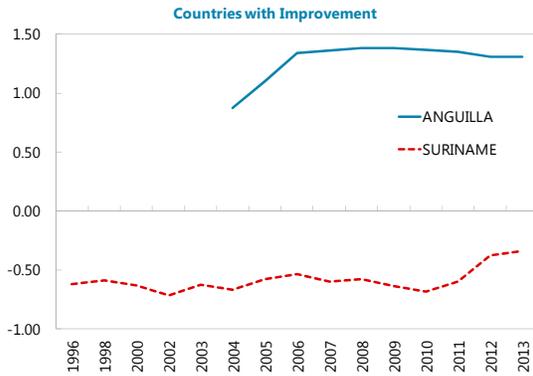
Political Stability and Absence of Violence: most of the countries in the region have a positive index value in 2013 except Guyana. Overall, improvement in the ratings took place in the region, especially after 2006-07. Prior to 2006, the ratings of Belize, Grenada and Suriname showed a marked shift down but stabilized thereafter. In sum, the region maintains a good rating for political stability and security which is supportive to growth.



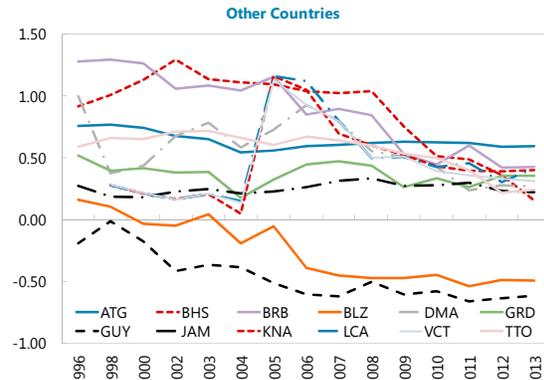
Government Effectiveness: there is a large divergence of the index in the region. Anguilla and Barbados have strong positive ratings, which reflect efficient government structures while Belize and Guyana have consistently negative ratings which indicate weak public policy. St. Kitts and Nevis, St. Lucia and St. Vincent and Grenadines showed strong improvement after 2004 while Grenada and Trinidad and Tobago maintained a positive rating.



Regulatory Quality: the region showed a very weak pattern. In 2013, the average index value of the region was as low as 0.23 and for countries such as Grenada, Guyana and Barbados; the quality index fell to its lowest level. St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines displayed significant variation in their indices with a sharp improvement in 2004 followed by an almost completely reversal from 2005 to 2013. Anguilla has the best quality of governance in the region.

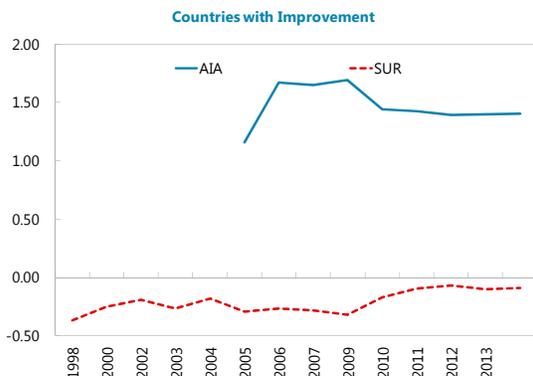


Sources: World Bank: Worldwide Governance Indicators

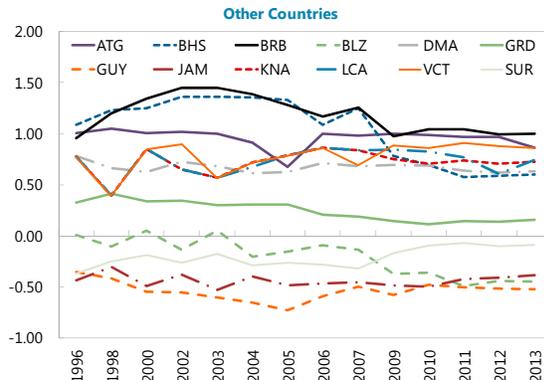


Sources: World Bank: Worldwide Governance Indicators

Rule of Law: Anguilla has the highest rating in the region and Guyana, Jamaica and Suriname maintained a negative rating overtime. There was a significant decline in Trinidad and Tobago from 2002 to 2007. Bahamas also experienced a sharp deterioration after 2009, which indicated the need for policy actions to strengthen the legal and judicial systems to support an improved environment for investment and growth.

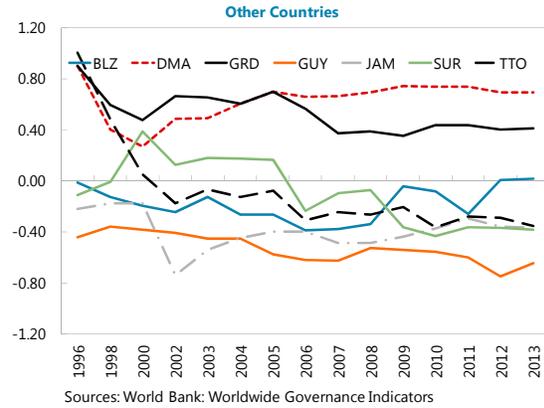
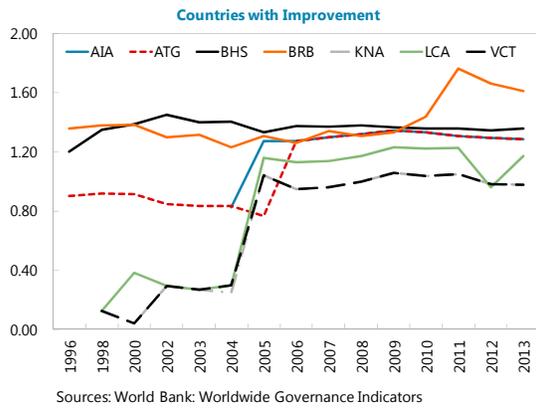


Sources: World Bank: Worldwide Governance Indicators

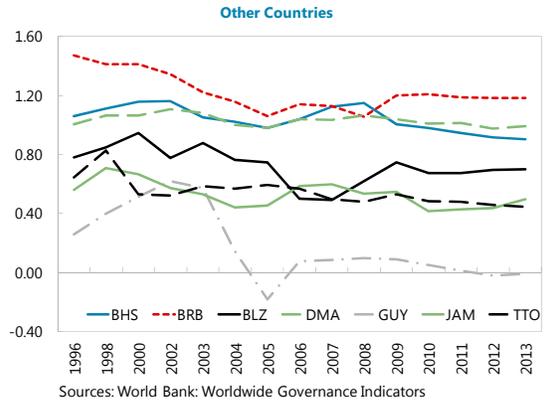
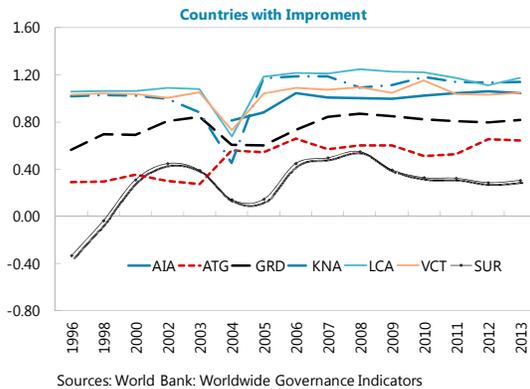


Sources: World Bank: Worldwide Governance Indicators

Control of Corruption: most ECCU members (except Dominica and Grenada) had significant improvement after 2004 and maintained a rating around 1.5. While larger countries like Belize and Guyana compares unfavorably with the rest of the Caribbean. Suriname's score deteriorated significantly over the period. The index suggests that part of the region needs to decisively tackle corruption as important part of the structural reform agenda.



Voice and Accountability: Barbados has freer government participation while Guyana has the most conservative political environment. A significant v-shape of the index for St. Vincent, St. Lucia, St. Kitts and Guyana appeared from 2004 to 2006.



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